

SOURCE INVENTORY

CATEGORY #37

CONTAMINATED SOIL AERATION

1999 EMISSIONS

Introduction

Contaminated soil aeration occurs when soil containing organic compounds is excavated and allowed to vent into the open air. These events include underground gasoline tank removal and soil excavation during pipeline leak repairs.

Methodology

The District requires a written report for any soil aeration activity. These reports were evaluated in 1990 to determine a generalized emission factor for each event as well as to estimate the total number of excavations.

Regulation 8, Rule 40 allows up to 150 pounds per day of organic compound emissions per aeration event. The organic compound emissions factor was calculated assuming the aeration site starts emitting at 120 pounds per day, with emissions halving every ten days, and with emissions set at zero at the 90th day. Two tank removals or replacements are also assumed to occur per aeration event.

The county factors are obtained per the number of aeration events in the District's required reports. The monthly factors are assumed to be uniform. More aeration events are assumed to start during weekdays than during weekends, which is reflected in the daily factors.

TRENDS

Historical

State regulations governing the construction standards of gasoline holding tanks require many stations to replace their existing tanks. In our Source Inventory of 1987, the District had 152 excavation events reported. In 1990, this number had grown to 1254. For 1996 base year, activity remained approximately at the same levels.

Growth

The number of excavations remained above 1100 in 1991 and 1992. Much of the increase since 1987 has been due to the Porter and Cologne Act regulated by the State Water Resources Control Board and California Regional Water Quality Control Boards. Parts of these underground tank regulations govern the replacement of underground storage tanks.

Per California Code of Regulations, Title 23, Division 3, Chapter 16, by December 22, 1998, all underground storage tanks containing hazardous substances, other than those containing motor vehicle fuel, need to be retrofitted with secondary containment. By the same date, motor vehicle fuel tanks made of steel needs to be retrofitted with secondary containment or be provided with both interior lining and exterior cathodic protection.

Even more excavation events are expect to occur as the military close several bases in the Bay Area. It is expected that the number of excavation events will remain at close to the 1990 rate at least through 1998 and decline afterwards.

Control

The District adopted Regulation 8, Rule 40 on February 15, 1989. Overall control afforded by this rule is 6.6%, with a rule effectiveness of 5.3%. This rule applies for soil aeration events only. Air stripping and soil excavation events are inventoried in category 937, under Regulation 8, Rule 47.

Rule 40 sets the rate of uncontrolled aeration in addition to describing an acceptable soil aeration procedure. Basically, for uncontrolled aeration, an operator may not aerate the soil at above a certain rate per day. However, the soil may be aerated over many days. Thus the total emission may not be reduced.